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ABSTRACT

The purpose of the research described in this paper is to find if the race of a sixth grade male child and the race of his existing social model are important in the child's imitation of a person with social power. Social power is defined as the model's personal control over another person. Social imitation is behavioral change in a child based on seeing the behavior of another person. The races under consideration here are Negro and Caucasian. The first experiment investigated whether legitimate social power is a relevant variable in social imitation. The second experiment varied the race of the child and the social model as potentially significant aspects of imitative behavior. Thirty Negro and Caucasian children viewed films using two Negro and two Caucasian 25-30 year old men as existing social models. The results of these experiments suggest that in a school setting, where integration of black and whites at both the faculty and student level has been working smoothly, neither race nor legitimate power stand out as determiners of imitation behavior in students. (Author/AWW)

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Final Report

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RACE, SOCIAL POWER AND IMITATION

November 1971

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ABSTRACT

The major purpose of the research described here was to find if the race of child and the race of his social model are important in the imitation of a model with social power. Social power is defined as the model's control over another person. Social imitation is behavioral change in an observer (O) based on seeing the behavior of another person (M). The races under consideration here are Negro and Caucasian.

The first experiment investigated whether "legitimate" social power is a relevant variable in social imitation. The second experiment varied the race of O and M as potentially significant aspects of imitative behavior. Both Negro and Caucasian Os viewed films using both Negro and Caucasian Ms.

The results of these experiments suggest that in a school setting, where integration of blacks and whites at both the faculty and student level has been working smoothly, neither race nor legitimate power stand out as determiners of imitation behavior in students. Further studies will investigate the role of status power and the role of the form of teacher-pupil interaction as the basis for attitude influence.

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RACE, SOCIAL POWER AND IMITATION

Introduction:

Imitation of other persons, as in watching an expert golfer, observing the boss' mannerisms; attending to the teacher's solution of a problem is one of the major methods for the acquisition of behavior. A child's values, thoughts, and behaviors are in large part determined by those of the models to whom he is exposed. Promulgation of societal values to later generations (a process intimately involved in the stability of a society) rarely occurs through direct teaching. Rather, subtle social methods like imitative modeling are responsible. Imitation begins early, probably before age 2, (personal communication - "Don't let her copycat me any more" said a 4 year old of his not quite 2 year old sister) and as individuals change their social roles during their lives, social imitation continues to be an important behavioral determinant throughout life. If inappropriate models, that is, models with the incorrect value systems or non-adaptive behavioral patterns, are the only ones available, the child learns inappropriate behaviors. However, even if "good" models are present, they may or may not be imitated. Social imitation then may be a critical factor in social breakdown. In order to understand the inculcation of cultural norms, it is essential to know the variables that influence modeling.

Social status is a variable that is suspected of influencing imitative behavior. That is, given a choice of a high and low status model, it is expected that an individual will pattern his behavior after the high status model (Bandura and Walters, 1966). Status can, however, rest on many different social foundations. Of interest here is social status based on two different foundations: (1) status residing within an individual because of his group membership, and (2) status residing with an individual because of his social control over other individuals. Examples of the first type of status are a doctor, who has high status, and a ditchdigger, who has low status. Examples of the second type of status are a teacher who has high status due to his ability to control others and a pupil whose status tends to be low since he is subjected to the control of others. It is not known which of these two types of social status is more important for modeling.

In our schools today, social status of both kinds described above reside in the white teacher, but the black child may find this model inappropriate. Why? Is it that the black child, because of his own self image, would only find a powerless model appropriate to his expectations? Is it possible that only a black model could elicite imitative behavior in a black child? These complex questions are what is under consideration here. Similarly, as school faculties are integrated, white students will have, as their models, black teachers. What problems, if any, will this raise in the usual course of social imitation? Otherwise stated, what is the most important social status characteristic of a model in eliciting imitative behavior in a child?

Following a general statement of what is involved in social imitation, work by other theorists and experimenters will be reviewed to show the derivation of the experiments to be described here. The first experiment is necessary to establish that imitation of a specific type of social power does occur. The second experiment examines the relative strength of social power as evidenced by behavioral control and social status as supplied by group membership. This experiment will contrast the modeling behavior of black and white children in imitating or failing to imitate black or white socially powerful models.

In line with current usage, (see Flanders, 1968) it is generally accepted than an observer (O) imitates a model (M) when observation of the behavior of M affects O so that O's subsequent behavior becomes more similar to the observed behavior of M. Bandura and Walters (1963) have further delimited the meaning of social imitation. "New responses may be learned or the characteristics of existing response hierarchies may be changed as a function of observing the behavior of others and its response consequences without the observer's performing any overt responses himself or receiving any direct reinforcement during the acquisition period." (pg. 47) The reality of the phenomenon of social imitation has been shown in a variety of situations with a variety of models in the presence of either direct or symbolic modeling. A recent reviewer (Flanders, 1968) has organized the results of experiments concerning imitation in terms of an empirical base that will presumably be useful to experimenters of varied theoretical orientations. He is concerned, as past researchers have been, with the reinforcement conditions in experiments on imitation and in research designs present in experiments dealing with imitation. Neither Flanders nor other theorists have been particularly concerned with an analysis of the characteristics of the observer or the relationship between the characteristics of the model and the characteristics of the observer. An analysis of the characteristics of the observer in social imitation remains to be done. There is, however, a suggested approach to an analysis of social characteristics that may be appropriate for the model in social imitation. (Bandura, Ross and Ross, 1963) This analysis is in terms of the social power of the model. Social psychologists have for a long time been concerned with the social power of an individual that allows him to influence directly the observable behavior of an individual or to influence the disposition of an individual to behave in a particular way.

Cartwright and Zander (1968), in their book on group dynamics, include an article by French and Raven (pp. 259-269) on the basis of social power. When French and Raven refer to power they mean the relationship between the observer and another person which is the source of that power. They distinquish five bases of power: (a) reward power, based on a person's perception that an individual has the ability to mediate rewards for him; (b) coercive power, based on a person's perception that an individual has the ability to mediate punishment for him;(c) legitimate power, based on the perception by one person that another person has a legitimate right to prescribe behavior for him; (d) referent power, based on

a person's identification with another individual and (e) expert power, based on a person's perception that O has some special knowledge or expertness.

In their now classic study, Bandura, Ross and Ross (1963) used French and Raven's analysis to predict results in a study dealing with rewarding power. Their experiments directly contrasted the social power of two models, where one model had the power to reinforce an adult and the other model had the power to directly reinforce the child S. In the general method of this experiment, the S is an observer of a social power interaction between two models. This is the pattern for the experiments proposed here. In one condition of the Bandura, Ross and Ross experiment an adult assumed the role of controller of resources and positive reinforcers, another adult was the consumer or recipient of these resources, while the child, an observer in this arrangement, was essentially ignored. In a second treatment condition one adult controlled the resources; the child, however, was the recipient of the positive reinforcers and the other adult was assigned a subordinate and powerless role. Following the experimental social interactions the two adult models exhibited divergent patterns of behavior in the presence of the child and a measure was obtained of the degree to which the child subsequently patterned his behavior after that of the model. In both experimental treatments, regardless of whether the rival adult or the children themselves were the recipients of the rewarding resources, the model who possessed rewarding power was imitated to a greater degree than was the rival or the ignored model. The positive results of this study encourage speculation about the effect on imitation of the other types of social power suggested by French and Raven. Unpublished work at the Institute for Research on the Underprivileged (Karen K. Nicholas-1968) confirms expert power as another type of social power that promotes social imitation.

There are other suggestions that social power theory is relevant to social imitation, although usually these studies do not contrast the power between two people but rather on separate occasions contrast the power of an individual with high power and an individual with lower power. A recent example of this kind of experiment is the study by Hetherington and Frankie(1967), in which they examined the role of the dominant parent in identification and imitation in children. They found that in the child's imitation of the parent, parental domination was a significant factor. Children of both sexes imitated the dominant parent more than the passive parent. Parental domination would probably reflect a combination of several types of power.

French and Raven's analysis of social power points up the lack of research dealing with legitimate power, the prescription of behavior for one person by another. The research to be proposed here will deal with this kind of power, that is, the social imitation of a person who can prescribe power over another person.

Experiment I:

In Experiment I, the legitimate power one person has over another is shown to the S by means of videotape. An interaction between the models on the film defines the power relationship. On films two models show alternative methods for solving the problem task. After viewing the film showing alternative methods of solution, and prescription of behavior of one model by the other, the S will be asked to repeat the task and his method of solution will be noted by E.

On the basis of studies dealing with other types of social power, one would expect that children would imitate a more powerful model (Bandura, Ross and Ross, 1963). This has particular relevance for instructional willingness of students to acquire desired responses being prescribed by the teacher.

Method

Subjects:

The subjects were 30 boys drawn from the 6th grade public school population in Columbia, South Carolin Each S was assigned to one of four groups at random. The four groups differed in the order in which they viewed the films. The four film orders were 1234, 2341, 3412, 4132. Each film fills each ordinal position once.

Apparatus:

In these experiments, the legitimate power one person has over another is shown to the Subject by means of videotape. We have a Sony Videocorder and the tapes were produced by the University of South Carolina E.T.V. An interaction between the two models on the film defines the power relationship. On the film two models first converse and establish the social power difference through their conversation and actions and then they show alternative methods for constructing a block design. After viewing the film showing these alternative methods of construction, the Subject was asked to repeat the task and his method of solution was noted by the experimenter. Since social power is our main variable, it is necessary to describe the situation and the conversation on the films.

The two men are similarily dressed, 25-30 year old men, 2 Caucasian, 2 Negro, appearing 2 at a time on the film. The setting has a non-descript background, a door to one side, a table in the room large enough for two people to work at.

A knock on the door opens the scene and a man goes to the door and opens it.

The man who has knocked enters and says: "I came as quickly as I could, I'm glad you called on me."

The other man says: "I'm glad you came. I knew you'd come quickly."

The person entering says: Congratulations on being elected president of the club, I've told you that I'd be pleased to help you."

The President shows the member where he wants him to sit and the member politely waits for the President to sit first.

The President says: "I want you to make this design," as he points, the film shows an inserted 'visual' that is an outline of the block design, "with these blocks."

The President points to a pile of blocks, both models make the design, each using a different sequence and each using a consistent color, either black of white. The camera at this point focuses on the table and the work of the two men as they make the design. When the designs have been completed the film ends and the experimenter asks the Subject to make the same design using the same kind of blocks. Equal numbers of both black and white blocks are available to the Subject.

On the basis of studies dealing with other types of social power, expert, coercive and reward power, we would expect that children would imitate a model with greater legitimate power. This kind of power has particular relevance for instructional processes where the perceived power of the teacher presumably greatly enhances the willingness of the student to model the teacher's behavior.

The first methodological problem in devising the experiments was the problem of the task to be modeled. An initial attempt was made to find materials that were commercially available. The puzzles on the market had several disadvantages. They were either too long or too simple; that is, we judged most of them to be either problem solving puzzles or else of little interest for the age group we were to use for the experiment. The puzzles were often distracting by their content and they often could not be put together in several different but comparable sequences, again usually due to the specific content of the puzzles. We decided that simply block designs made with triangular blocks and with a choice of color would serve our purposes best. The actual designs chosen are in Appendix A. For each design two triangular blocks make one 6 inch square.

The requirements for a system of scoring that would reflect the amount of imitation were quite stringent. Since two models would be present in any film, two different but equivalent ways of doing the block design has to be devised. In order to score the constructions, the experimenter had to be able to differentiate the two different construction sequences. Since we used black and white TV film, the most easily differentiated colors for the blocks were black and white.

Before we selected the particular designs, a variety of designs including these were initially tested for difficulty. We felt that it was important that the designs did not constitute difficult problems

for the children of the experimental population. The task could not be a test of problem solving. In the first round of pretesting the materials, the child was simply asked to watch the experimenter and make a design like the one he made. The experimenter made the design and then recorded the time and noted the efforts of the Subject as he attempted to make a design like the one he made. The experimenter made the design and then recorded the time and noted the efforts of the Subject as he attempted to make the same design. The experimenter also observed the sequence of placing the blocks and the color of the blocks used by the Subject. Several black designs were rejected as too difficult after this initial pretesting. However, some of the block designs worked well, in terms of the imitation of sequence and color.

A second test of the materials was required to test the children's awareness of color and to find if specific sequences were used by most children. A strong sequence or color bias in making the block designs would interfere with the modeling process. The results of this testing showed that children were aware of color; that is, when offered blocks of both black and white, they often used one color consistently. However, there was no consistent use of color for all children nor was there consistent use of a particular color for children of either race. Consistent preferences for a particular sequence in the pilot study were taken into consideration in designing the sequences that the models used in the films. If a sequential preference did occur, then two other sequences were devised for use with the models.

Task:

In the film that the child sees are two young men both Negro or both Caucasian who engage in a short conversation and then sit down to work the block design. The two models work simultaneously, each using a different sequence and each using a consistent but different color. When the designs have been completed, the film ends and the experimenter asks the Subject to make the same design using the same kind of blocks.

Each subject sees four films. Two films show two black models and two films show two white models. Individuals are crossed with power over films. That is, each model of each race is in each power position. In the second experiment of this set, the subjects watch films with one balck and one white mode. In each film is one high-power and one low-power model.

In the first experiment, we have 15 Negro and 15 Caucasian sixth and seventh grade boys from a middle school on the outskirts of Columbia. Each child supplies us with 4 scores for sequence and 4 scores for block color.

Results:

An analysis of variance ofr this first experiment is presented in Table I. None of the main results showed significance.

The one interaction that was significant showed an interaction that was reverse of what was expected. That is, the data suggested that black subjects tended to model high power white models more than they modeled high power black models. On the other hand, white subjects tended to model black high power models more than white high power models. The second experiment gave us an opportunity to confirm or reject this suggested interaction because it dealt more directly with race as a variable.

Table 2 presents the contingency tables for Experiment I. The contingency table for the entire design of Experiment I shows that the difference between catagories is not great. The modeling behavior (placement of blocks in the design of the same color as the high power model) was scored by giving 1 point for each triangle of the same color. In theory, scores could vary between zero and ten. Zero meant that the S chose all his blocks of the same color as the high-power model. This score had the meaning of modeling the low-power model. A score of 10 meant that S chose all his blocks of the same color as the high-power model. Since there was a strong tendency to use blocks of all one color, in actuality most of the scores were either zero or ten.

We did try to confirm our manipulation of social power. Following the experiment, each subject was queried as to whether or not he knew which model was president. The subjects knew both what model was president and what color of blocks he had used in the last film that they had seen. So the subjects had gotten the point of the film to the extent that the term "president" is associated with legitimate social power. No query was made as to the meaning - to the subject - of the vocal interaction between the models on the film.

Conclusion:

The conclusion of the first experiment was that the data suggest a complex interaction between race and social power as regards imitation behavior in sixth and seventh graders. One situational factor that may have influenced our experiment is the particular school environment. The school where the experiment took place is well integrated. Both student and faculty, and racial problems are at an absolute minimum. The school plays down authority and is run in an easy going, informal fashion. It may be that in this context the identification of more and less powerful figures is unclear to the students.

Experiment II:

The rationale for Experiment II is the same as that for Experiment I except that the additional factor of racial differences was crossed with power differences so that: 1) the relative strength of these two factors as they influence imitation behavior could be seen and 2) the complex interaction between race and social power that appeared in Experiment I could be directly tested.

Method

The method was the same as for Experiment I except that one Negro and one Caucasian model were present in each film. The Ss did not see films with both models of the same race in this experiment. However, both Caucasian and Negro models were in each power position so that two films showed Negros in the high power position with the Caucasians in the low power position and two films showed Caucasians in the high power positions with Negros in the low power positions. The personal characteristics of the individual models was also controlled in that each model took a more powerful position in another film. Power position, race and individual characteristics did not vary together across films.

Results:

The analysis of variance for Experiment II is presented in Table 3. Several sources of variance differ significantly from the hypothesis of no difference. This is mainly attributable to the smaller error term in this analysis as compared with the analysis of variance for Experiment I. The hypothesis of no difference in modeling over films must be rejected. We do find no difference in tendency to model a high-power model between Negro and Caucasian Ss. However, both the interactions between Ss and films and between Ss and Negro or Caucasian high-power model are significant. The contingency table for Experiment II, Table 4, makes clear the direction of these several significant effects. The most significant aspect of the analysis is the strong tendency for Caucasian Ss to model after the Black high power model.

With this experiment as with Experiment I, caution must be exercised with regard to these results because of the distribution of scores. The Ss tended to model block color completely so the scores do not meet the underlying assumption of a normal distribution. Although this assumption does not need to be completely met, nevertheless the results of the analysis of variance should be taken as suggestive only.

Conclusions:

Despite the caution with which the results must be viewed, the consistency across experiments is striking. The significant interaction of Experiment I was confirmed when tested more directly in Experiment II. Opposite race high power models tend to be imitiated more than same race high power models. Because of the reciprocity of a choice, the results are not entirely clear. The modeling of a high-power model could be due to a tendency to model after high-power directly or it could be due to avoidance of modeling the low-power model. It could be, for instance, the Caucasian Ss model black high-power models because they do not want to model white low-power models. Similarly, Negro Ss could model white high-power models either directly, as an indication of their identification with a high-power model of opposite race or indirectly as avoidance of modeling a same race low-power model.

It does appear that based on the knowledge generated by these experiments, a different design could be used to further explore the issue of same and opposite race imitation. The importance of this issue cannot be overstated. Teachers and policy makers at all levels should have knowledge of this important relationship between races.

BIBLIOGRAPHY

Bandura, A., Ross. D., and Ross, S.A., Journal of Abnormal and Social Psychology, "A comparative test of the status envy, social power and secondary reinforcement theories of identificatory learning", 1963, 67, 527-534.

Bandura, A., and Walter, R. H., Social Learning and Personality Development, New York: Holt, Rinehart and Winston, Inc. 1963, Pg.1-329.

Breyer, N. L., "Imitation as it relates to social learning in children." Unpublished paper at the Psychology Department at Florida State University, May, 1966.

Flanders, J. P. "A review of research on imitation", Psychological Bulletin, 1968, 69, 316-337.

French, J.R.P., Jr., and B. Raven., "The bases of social power." In D. Cartwright and A. Zander (eds.) Group Dynamics,(2nd Ed.) New York: Harper and Row, 1960. Pgs. 607-623.

Hetherington, E. M and Frankie, G., "Effects of parental dominance, warmth, and conflict on imitation in children." Journal of Personality and Social Psychology, 1967, 6, 119-125.

May, J.G. and Breyer, N. L., "The effects of race and socioeconomic status on imitation learning in children using white male and female models." Paper presented at the Southeastern Psychological Association, Roanoke, Virginia, April, 1968.

Nicholas, Karen; McCarter, R.E. and Heckel, R.V., "The effects of race and sex on the imitation of television models." Unpublished Master's Theses at the University of South Carolina, 1968.

Sgan, M. L., "Social reinforcement, socioeconomic status and susceptibility to experimenter influence." Journal of Personality and Social Psychology, 1967, 5, 202-210.

Whiting, J. W. "Resource mediation and learning by indentification." in I. Iscoe and H. W. Stevenson (eds.), Personality Development in Children. Austin: University of Texas Press, 1960. Pg. 112-126.

Appendix 1: Raw Data for Experiment I

BLACK Ss					WHITE Ss				
Film No.	V	IV	IX	VII	Film No.	V	IV	IX	VII
S_1	0	0	0	10	S_{16}	0	0	0	0
S_2	0	0	10	10	S_{17}	0	0	0	10
S_3	10	0	10	10	S_{18}	0	0	0	10
S_4	0	10	0	0	S_{19}	0	0	0	10
S_5	0	10	0	0	S_{20}	6	6	4	7
S_6	10	0	10	10	S_{21}	0	0	10	0
S_7	10	0	10	10	S_{22}	10	10	0	0
S_8	0	0	0	10	S_{23}	10	10	0	0
S_9	5	7	6	4	S_{24}	10	10	10	10
S_{10}	10	0	4	10	S_{25}	0	10	0	0
S_{11}	0	10	0	0	S_{26}	0	10	0	0
S_{12}	0	0	10	0	S_{27}	10	10	10	10
S_{13}	0	10	10	10	S_{28}	10	0	0	10
S_{14}	0	10	0	10	S_{29}	10	0	10	10
S_{15}	10	10	0	0	S_{30}	10	0	0	0

Appendix 2: Raw Data for Experiment II

BLACK $\underline{S}$s					WHITE $\underline{S}$s				
Film No.	II	I	VI	VII	Film No.	II	I	VI	VII
S_1	0	0	10	0	S_{24}	10	10	0	10
S_2	0	0	10	0	S_{25}	10	10	10	0
S_3	10	10	0	10	S_{26}	0	0	0	10
S_4	10	0	10	10	S_{27}	0	0	0	0
S_5	10	10	0	0	S_{28}	0	0	0	0
S_6	0	0	0	10	S_{29}	10	0	0	0
S_7	0	10	10	0	S_{30}	10	10	10	10
S_8	10	10	10	10	S_{31}	10	0	0	10
S_9	0	10	10	10	S_{32}	10	0	10	10
S_{10}	0	0	0	10	S_{33}	10	10	0	0
S_{11}	10	10	10	0	S_{34}	0	0	10	10
S_{12}	10	0	0	10	S_{35}	10	10	0	0
S_{13}	0	10	0	0	S_{36}	10	10	0	0
S_{14}	10	10	0	10	S_{37}	10	10	10	0
S_{15}	0	0	10	10	S_{38}	0	10	10	0
S_{16}	10	0	0	10	S_{39}	10	10	10	0
S_{17}	0	0	10	0	S_{40}	0	0	10	10
S_{18}	10	10	10	10	S_{41}	10	10	0	10
S_{19}	0	0	0	10	S_{42}	10	10	0	10
S_{20}	0	0	0	10	S_{43}	10	10	0	0
S_{21}	10	10	0	10	S_{44}	0	0	10	10
S_{22}	10	0	10	10	S_{45}	0	10	0	0
S_{23}	10	10	0	10	S_{46}	10	10	10	10

FIGURE 1: THE SQUARE BLOCK DESIGN - Experiment I and II

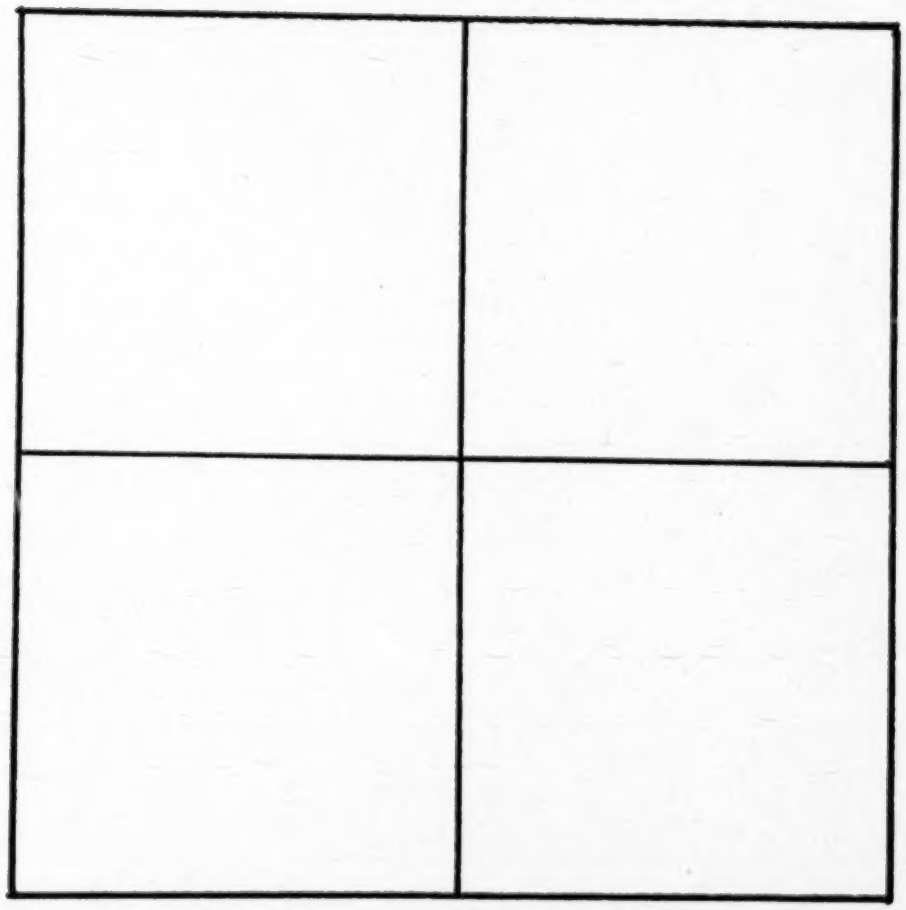

FIGURE 2: THE L-SHAPED BLOCK DESIGN - Experiment I and II

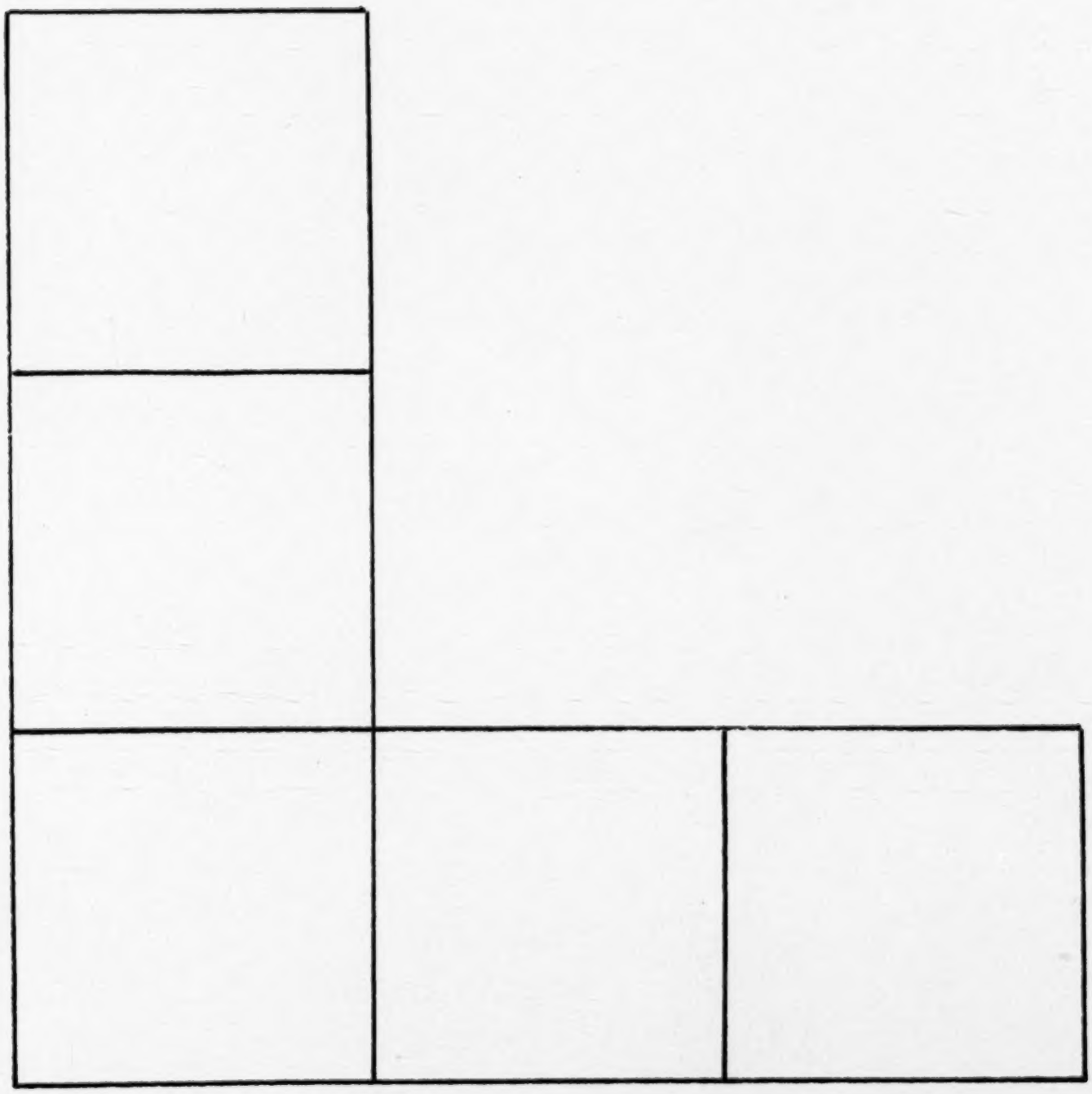

FIGURE 3: THE T-SHAPED BLOCK DESIGN - Experiment I and II

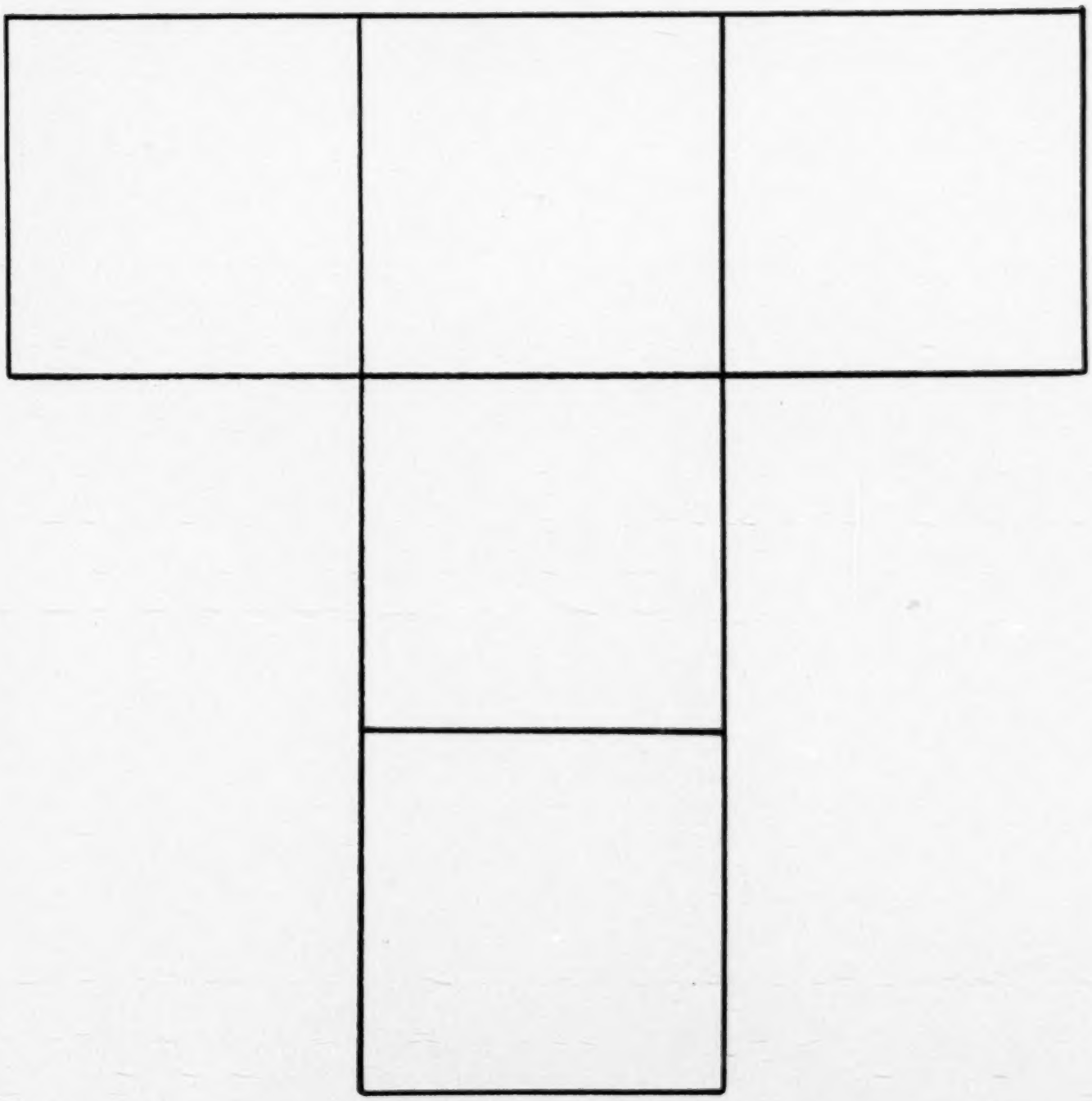

FIGURE 4: THE CROSS-BLOCK DESIGN - Experiment I and II

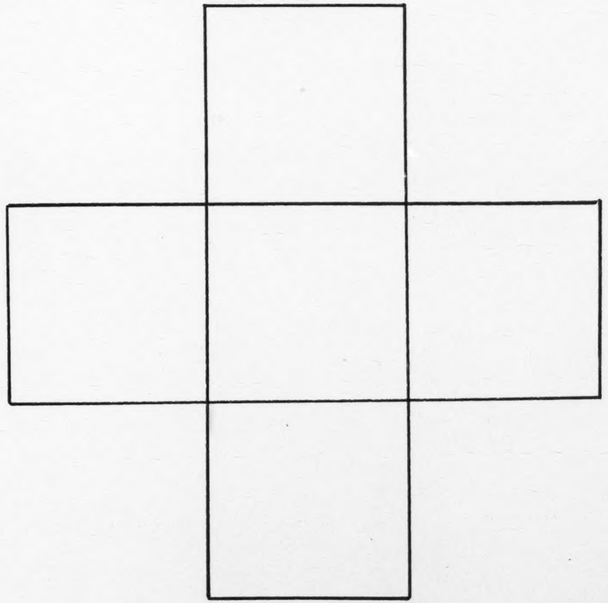

FIGURE 5: REJECTED PATTERN (a)

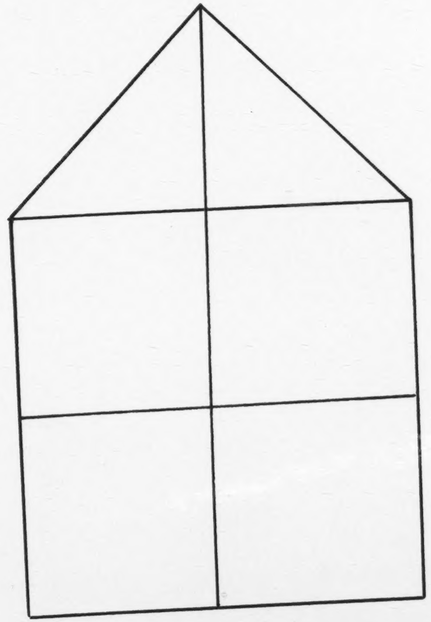

FIGURE 5: REJECTED PATTERN (b)

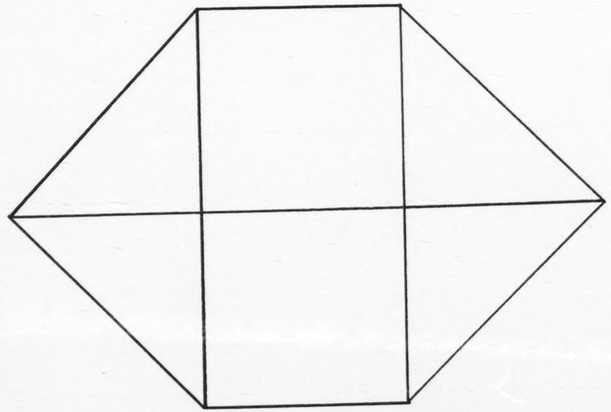

FIGURE 5: REJECTED PATTERN (c)

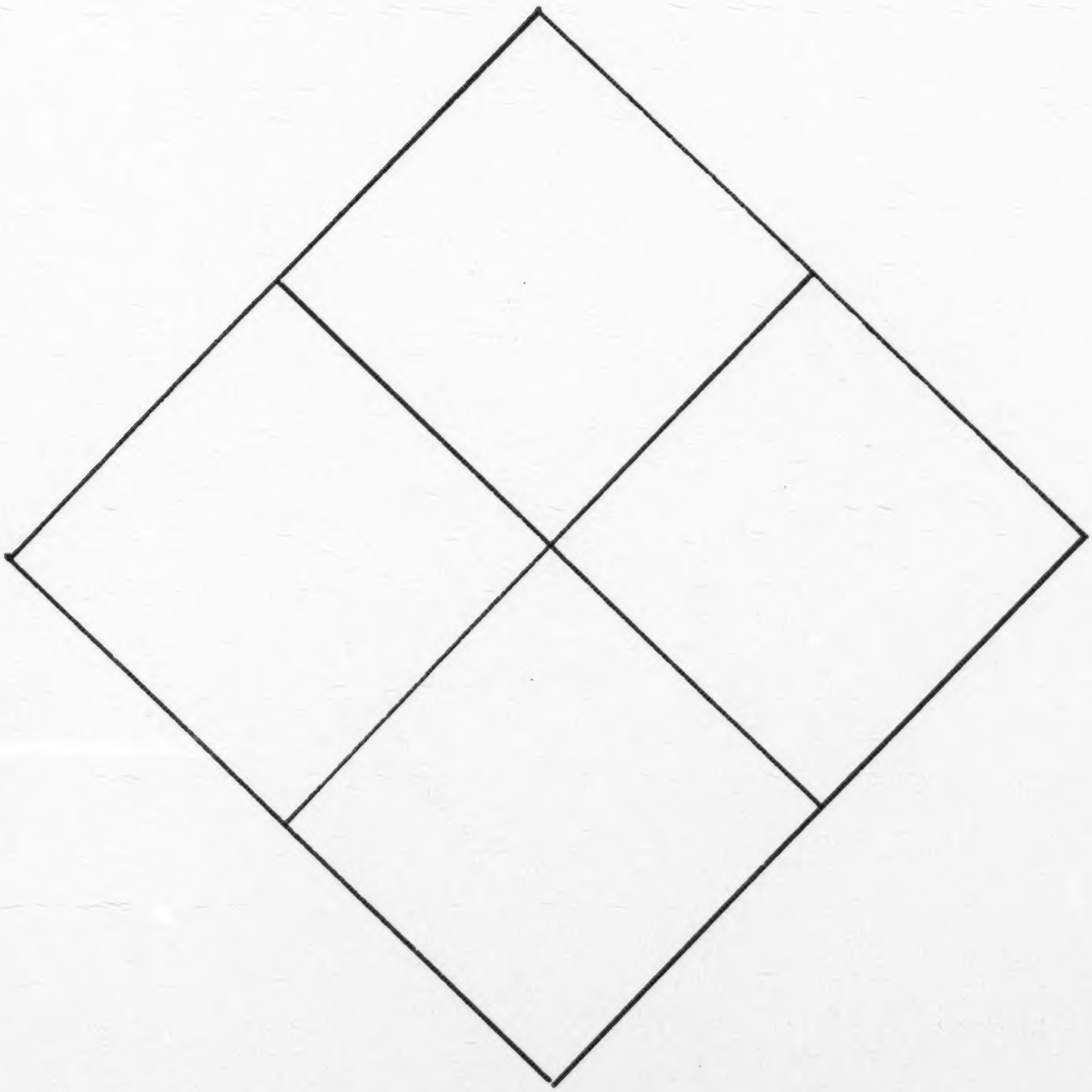

TABLE 1: ANALYSIS OF VARIANCE - Experiment I

	Source	SS	df	MS	p
Between Ss	A Groups (Black Ss vs. White Ss)	4.41	1	4.41	NS
Within Ss	B. Films	57.89	3	19.29	NS
	C. Black models vs. White models	3.69	1	3.69	NS
Interactions:	A X B	42.49	3	14.16	NS
	A X C	32.99	1	32.99	.05
	B X C (nested)				
	A X B X C (nested)				
Subjects		3247.25	104	31.22	
TOTAL		2767.33	119	23.25	

TABLE 2

Contingency Tables for Experiment I
Number of Ss in each cell

Black Ss

Film No.	0	10	Other
Bl. Mds. V	9	5	1
IV	8	6	1
Wh. Mds. IX	7	6	2
VIII	5	8	1

White Ss

Film No.	0	10	Other
Bl. Mds. V	6	8	1
IV	6	8	1
Wh. Mds. IX	10	4	1
VIII	7	7	1

TABLE 3: ANALYSIS OF VARIANCE - Experiment II

	Source	SS	df	MS	p
Between Ss	A Groups (Black Ss vs. White Ss	.02	1	.02	NS
Within Ss	B. Films	52.73	3	17.58	.01
	C. Black high power vs. white high power	8.70	1	8.70	NS
Interactions:	A X B	95.08	3	31.69	.01
	A X C	79.21	1	79.21	.01
	B X C (nested)		3		
	A X B X C (nested)		3		
Subjects		715.22	168	4.26	
TOTAL		4566.22	183	24.95	

TABLE 4

Contingency Tables for Experiment II

Black Ss	Film No.	0	10
Bl. (HP) Mds.	II	11	12
	I	12	11
Wh. (HP) Mds.	VI	12	11
	VII	7	16

White S_S	Film No.	0	10
Bl. (HP) Mds.	II	9	14
	I	9	14
Wh. (HP) Mds.	VI	13	10
	VII	12	11